

U.S. Patent Application Serial No. 10/015,564
Amendment filed August 22, 2005
Reply to OA dated May 23, 2005

REMARKS

Claims 24-58 are pending in this application. An amendment is submitted canceling claim 27 without prejudice or disclaimer, and amending claims 24 and 26, in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. A minor amendment is also made to the specification to correct a spelling error. The applicants respectfully submit that no new matter is added by these amendments. It is believed that this Response is fully responsive to the Office Action dated May 23, 2005.

Support for the amendments to claims 24 and 26 is as follows:

The recitation that the polyfunctional compound (B) may be a compound "of acrylic acid, methacrylic acid and/or derivative thereof" is supported by original claims 4 and 10. The recitation that this may be "fumaric acid, maleic acid, malic acid, tartaric acid, isophthalic acid, terephthalic acid, pyromellitic acid, trimellitic acid or derivatives thereof" is supported by page 13 of the specification.

The recitation in claim 26 that "said epoxy resin is an epoxy resin with glycidylamine moiety derived from metaxylylendiamine" is supported by canceled claim 27.

Entry of the amendment and reconsideration of the rejections are respectfully requested. Upon entry of the amendment, claims 24-26 and 28-58 will be pending.

Claims 24-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Huang et al. (3,683,044) in view of Nishimura et al. (5,356,961).

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Reconsideration of the rejection is respectfully requested in view of the submitted amendment to the claims. Entry of the amendment is respectfully requested.

The Examiner alleges that when $n = 0$, the compound of Nishimura et al. is the same as that of applicants.

In the amendment submitted herein, the polyfunctional compound (B) in claims 24 and 26 is limited to a "compound of acrylic acid, methacrylic acid and/or derivative thereof, fumaric acid, maleic acid, malic acid, tartaric acid, isophthalic acid, terephthalic acid, pyromellitic acid, trimellitic acid or derivatives thereof".

The present invention provides a composition for coating having a gas barrier property, comprising coating-forming components of an epoxy resin and an amine curing agent. Herein, the epoxy resin is an epoxy resin with glycidylamine moiety derived from metaxylylenediamine and the amine curing agent is a reaction product obtained from reactants consisting essentially of (a) metaxylylenediamine or paraxylylenediamine and (B) polyfunctional compound having at least one acyl group (claim 24) or (A), (B) and (C) formic acid, acetic acid, propionic acid, butyric acid, lactic acid, glycolic acid, benzoic acid and/or derivative thereof (claim 26).

The (B) polyfunctional compound is a compound having at least one acyl group which is capable of forming an amide group moiety by reaction with a polyamine to form an oligomer. Here, the polyamine refers to metaxylylene diamine or paraxylylenediamine. In other words, the word "polyfunctional" in "(B) polyfunctional compound" of the present invention refers to the reactivity of the acyl group in "(B) polyfunctional compound" in the production of an oligomer by reaction of

metaxylylenediamine or paraxylylenediamine with (B) polyfunctional compound.

In the amendment to claims 24 and 26, the possible compounds for “(B) polyfunctional compound” have been limited.

Nishimura et al. discloses an aqueous epoxy resin composition which comprises an epoxy resin, an amidoamine obtained by the reaction of a carboxylic acid with a polyamine compounds represented by the general formula (I). Nishimura et al. discloses examples of carboxylic acid to be used.

The Examiner alleges that: “Nishimura et al. discloses an epoxy resin composition comprising an epoxy resin and a curing agent that is a reaction product of metaxylylene diamine and **a polyfunctional compound** having at least one acyl group” (page 2 of the Office action, emphasis added). However, Nishimura et al. does not use the term “polyfunctional compound”.

Applicant notes that the acids recited as component (C) in claim 26 (formic acid, acetic acid, propionic acid, butyric acid, lactic acid, glycolic acid, benzoic acid and/or derivative thereof), are not polyfunctional compounds suitable for use as component (B). The carboxylic acid of (C) forms an end group of an oligomer to be produced by using together with (B) polyfunctional compound.

The examples of carboxylic acids in Nishimura et al. overlap with those of component (C) of the present invention. Applicant further notes that Nishimura et al. discloses to use such carboxylic acids **alone**.

That is, the object for use of carboxylic acid in Nishimura et al. is different from that of (B) polyfunctional compound and (C) carboxylic acid in the present invention.

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Regarding claims 24-30, the Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the amine curing agent of Nishimura et al. in the composition of Huang et al. However, the amine curing agent of the present invention is clearly different from that of Nishimura et al.

Moreover, Applicant notes that using the amine curing agent of the present invention produces an excellent gas barrier property.

Regarding claims 29 and 30, the Examiner alleges that “the materials of the Huang et al. combination discloses at least similar materials [sic], and at least similar materials would have yielded a composition with an at least similar gas barrier property” (page 3, lines 9 to 11, of the Office action).

However, it is clear that the materials of the Huang et al. combination are clearly distinguished from those of present invention because Huang et al. does not disclose to apply the amine curing agent providing an excellent gas barrier property, as in the present invention.

Applicant therefore submits that claims 24-26 and 28-30, as amended, are not anticipated by, and are not obvious over, Huang et al. (3,683,044) and Nishimura et al. (5,356,961), taken separately or in combination.

Claims 31-58 are allowed.

No amendment has been made to claims 31-58.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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